FIG. 1

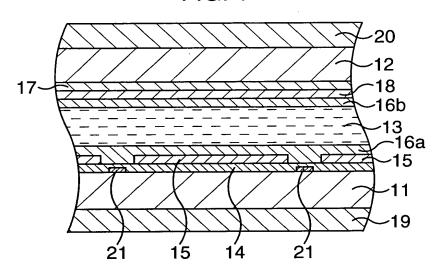
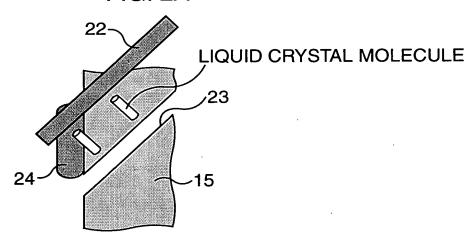


FIG. 2A



Best Available Copy

FIG. 2B

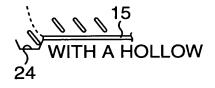


FIG. 2C

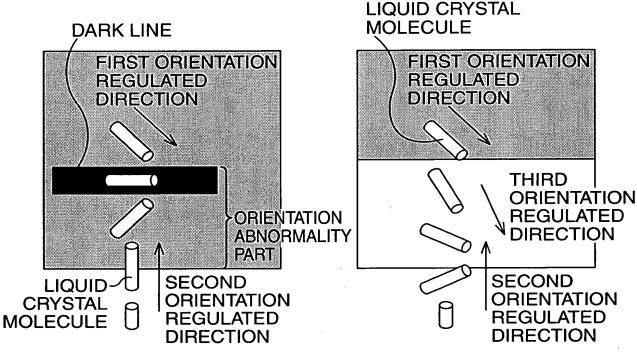
DARK LINE

15

WITHOUT A HOLLOW







CONVENTIONAL

...

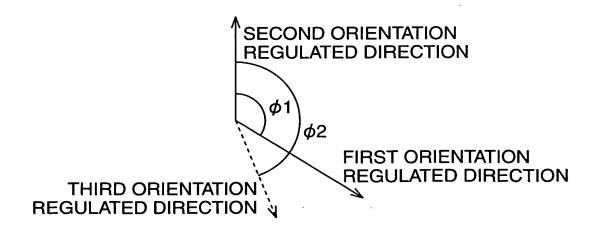
ľ,ħ

104

GIVE A THIRD REGULATING FORCE

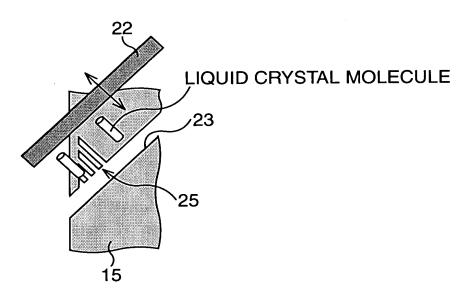
FIG. 3B

FIG. 3C

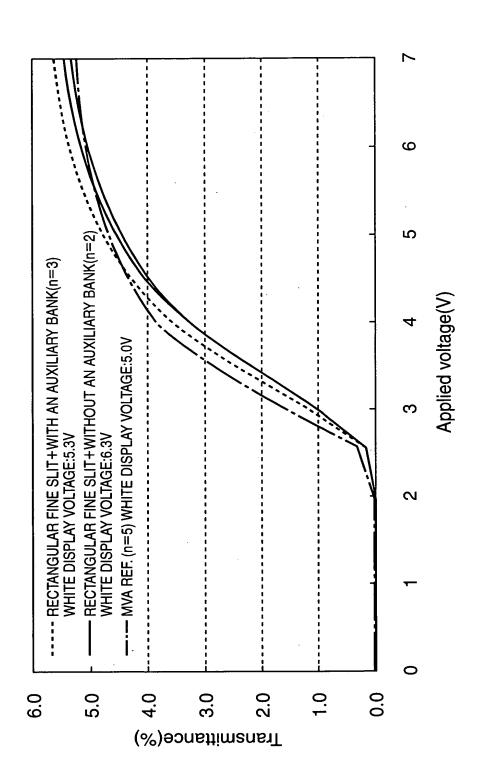


RELATION BETWEEN DIRECTIONS OF ALIGNING FORCE AND ANGLES

FIG. 4



ARCHITATE DALLER



Greer, Burns & Crain, Ltd. (Patrick Burns) Ref. No. 1117.66107 Sheet 5 of 27 (312) 360 0080

FIG. 6A

FIG. 6B

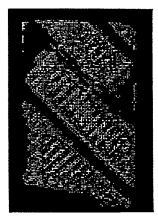
FIG. 6C



APPLIED VOLTAGE: 3V



APPLIED VOLTAGE: 4V



APPLIED VOLTAGE:5V



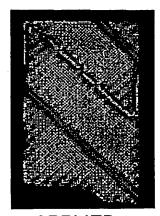




APPLIED VOLTAGE: 6V



APPLIED VOLTAGE:7V

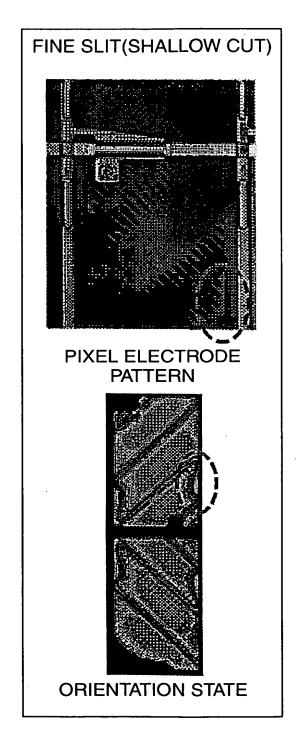


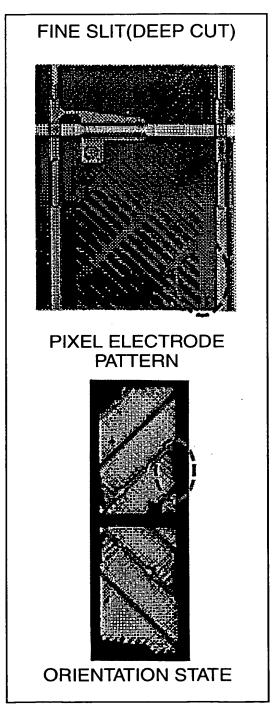
APPLIED VOLTAGE: 8V

LIQUID CRYSTAL DISPLAY DEVICE . . .

akeda et al.
reer, Burns & Crain, Ltd. (Patrick Burns)
Ref. No. 1117.66107
Sheet 6 of 27 (312) 360 0080

FIG. 7





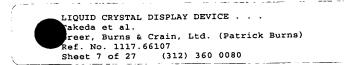


FIG. 8

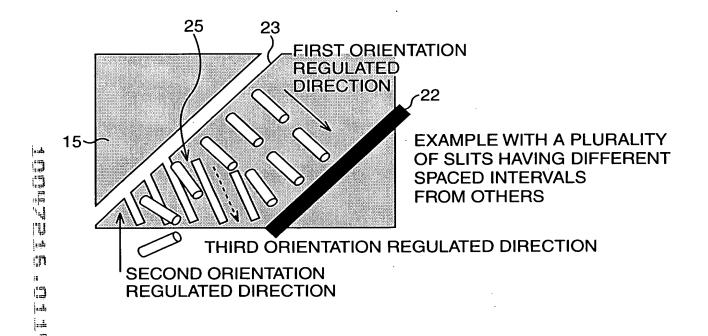
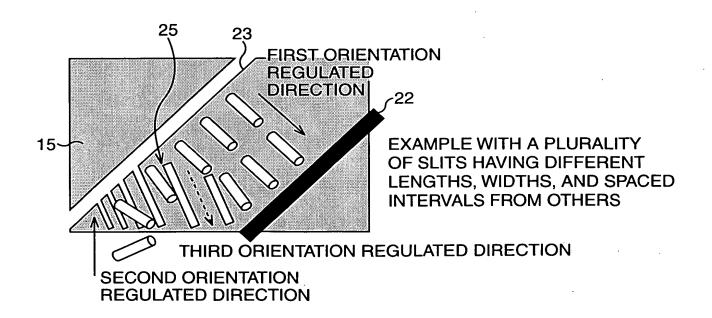
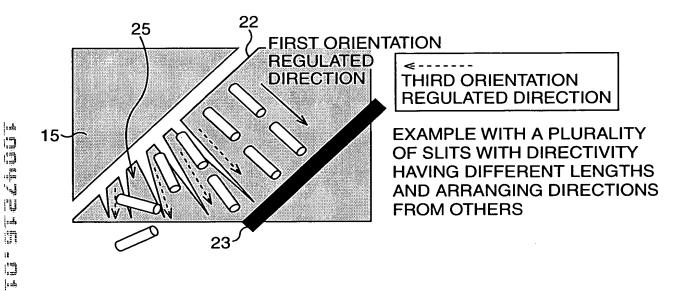


FIG. 9



LIQUID CRYSTAL DISPLAY DEVICE . . . Takeda et al. Greer, Burns & Crain, Ltd. (Patrick Burns Ref. No. 1117.66107 Sheet 8 of 27 (312) 360 0080

FIG. 10



4411

LIQUID CRYSTAL DISPLAY DEVICE . . .
Takeda et al.
Greer, Burns & Crain, Ltd. (Patrick Burns)
Ref. No. 1117.66107
Sheet 9 of 27 (312) 360 0080

FIG. 11

	①WITH AN AUXILIARY BANK	②WITHOUT AN AUXILIARY BANK	③CHANGE THE DIRECTION OF AN AUXILIARY BANK
STRUCTURE	PROTRUSION OF SUBSTRATE PIXEL ELECTRODE ON TFT SUBSTRATE	DARK LINE	
TRANSMITTANCE	1	0.9	0.95
MISALIGNMENT MARGIN	×	0	Δ
FEATURES	·LIQUID CRYSTAL ORIENTATION OF A PIXEL EDGE CHANGES GREATLY DUE TO DEVIATION AMONG EACH SHOT AND IN PASTING (A LARGE DEGREE OF TRANSMITTANCE CHANGE) ·NO DARK LINE ON A PIXEL EDGE (A LARGE DEGREE OF IMPROVEMENT IN TRANSMITTANCE)	·LIQUID CRYSTAL ORIENTATION OF A PIXEL EDGE CHANGES DUE TO DEVIATION AMONG EACH SHOT AND IN PASTING (TO A SMALL DEGREE) ·OCCURRENCE OF ONE DARK LINE ON A PIXEL EDGE (A LARGE DEGREE OF DECREASE IN TRANSMITTANCE)	· LIQUED CRYSTAL ORIENTATION OF A PIXEL EDGE CHANGES DUE TO DEVIATION AMONG EACH SHOT AND IN PASTING · NO DARK LINE ON A PIXEL EDGE

LIQUID CRYSTAL DISPLAY DEVICE . . . Takeda et al . Greer, Burns & Crain, Ltd. (Patrick Burns) Ref. No. 1117.66107 Sheet 10 of 27 (312) 360 0080

FIG. 12

	The state of the s	
	4 HOLLOW IN A PIXEL EDGE	⑤FINE SLITS +CONNECTION AT THE END
STRUCTURE	HOLLOW	CONNECTION SLIT
TRANSMITTANCE	0.92	0.95
MISALIGNMENT MARGIN	0	0
FEATURES	· LIQUID CRYSTAL ORIENTATION OF A PIXEL EDGE CHANGES DUE TO DEVIATION AMONG EACH SHOT AND IN PASTING (WITH A MARGIN) · NO DARK LINE ON A PIXEL EDGE	·LIQUID CRYSTAL ORIENTATION DOES NOT CHANGE EASILY DUE TO DEVIATION AMONG EACH SHOT AND IN PASTING (WITH THE LARGEST MARGIN) ·NO DARK LINE AT A PIXEL EDGE (TRANSMITTANCE UNDER IMPROVEMENT) ·TRANSMITTANCE IS IMPROVED GREATLY AT A DRIVING VOLTAGE OF 6V OR HIGHER (EQUAL TO ①)

LIQUID CRYSTAL DISPLAY DEVICE . . .

Takeda et al.

Greer, Burns & Crain, Ltd. (Patrick Burns)

Ref. No. 1117.66107

Sheet 11 of 27 (312) 360 0080

FIG. 13

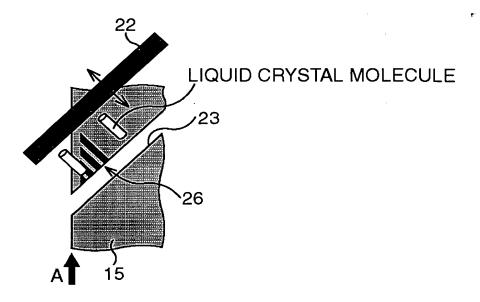
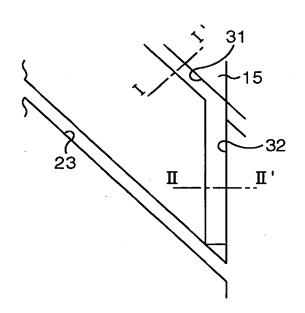
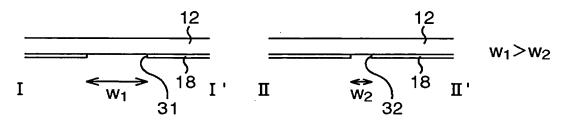


FIG. 14A



.FIG. 14B



LIQUID CRYSTAL DISPLAY DEVICE . . .
Takeda et al .
Greer, Burns & Crain, Ltd. (Patrick Burn
Ref. No. 1117.66107
Sheet 12 of 27 (312) 360 0080

FIG. 15A

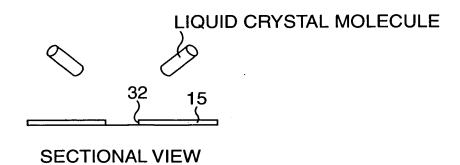
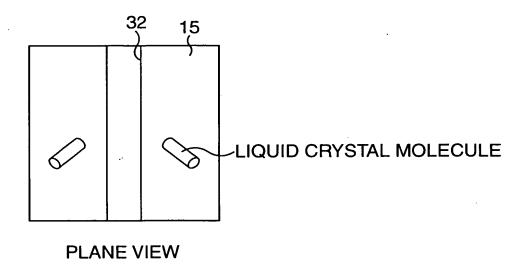


FIG. 15B



Takeda et al.
Greer, Burns & Crain, Ltd. (Patrick Burns Ref. No. 1117.66107
Sheet 13 of 27 (312) 360 0080

FIG. 16A

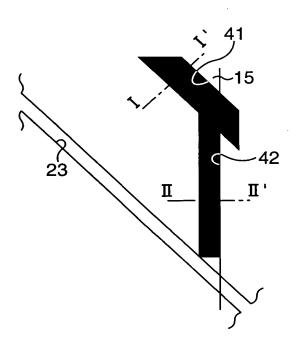
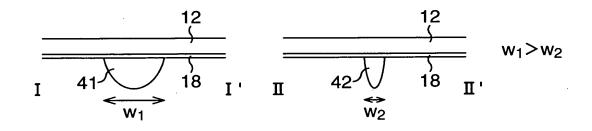


FIG. 16B



Cill's Fire the Caralles

LIQUID CRYSTAL DISPLAY DEVICE . . . Takeda et al. Greer, Burns & Crain, Ltd. (Patrick Bur Ref. No. 1117.66107 Sheet 14 of 27 (312) 360 0080

FIG. 17A

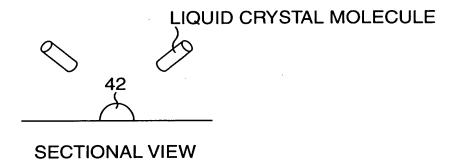
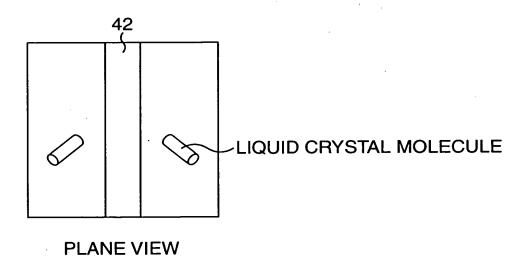
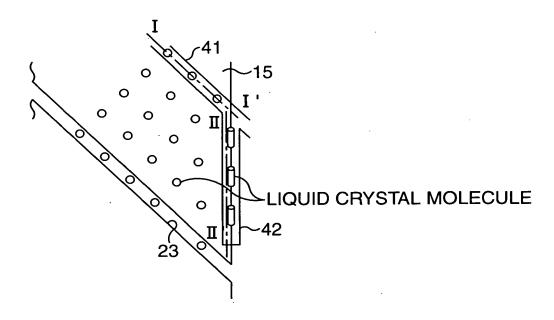


FIG. 17B



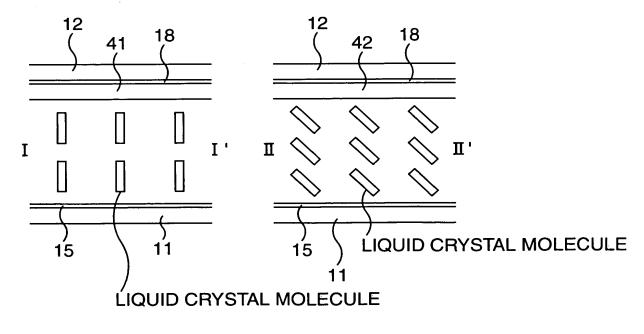
LIQUID CRYSTAL DISPLAY DEVICE . . .
Takeda et al.
Greer, Burns & Crain, Ltd. (Patrick Burns)
Ref. No. 1117.66107
Sheet 15 of 27 (312) 360 0080

FIG. 18A



PLANE VIEW

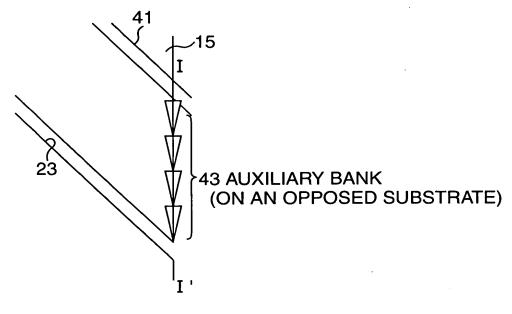
FIG. 18B



SECTIONAL VIEW

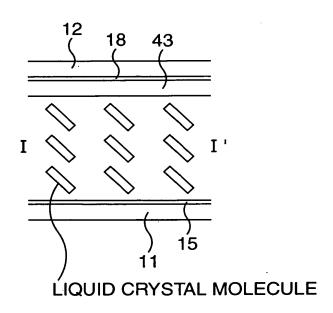
LIQUID CRYSTAL DISPLAY DEVICE . . .
Takeda et al.
Greer, Burns & Crain, Ltd. (Patrick Burns
Ref. No. 1117.66107
Sheet 16 of 27 (312) 360 0080

FIG. 19A



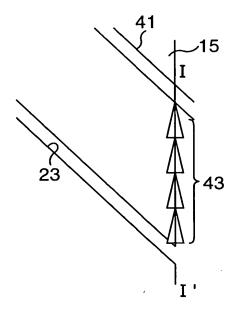
PLANE VIEW

FIG. 19B



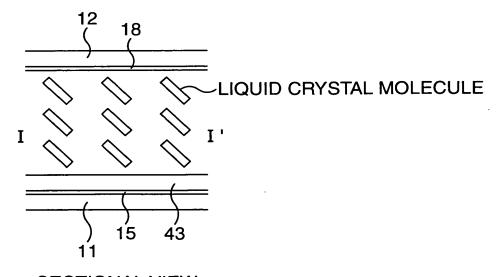
SECTIONAL VIEW

FIG. 20A



PLANE VIEW

FIG. 20B



SECTIONAL VIEW

TOPLY DE DITLE

FIG. 21A

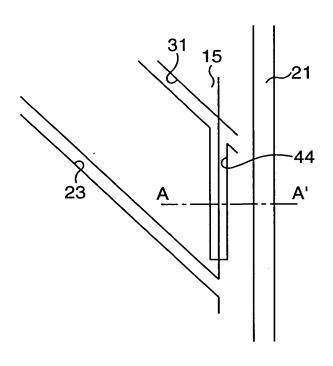
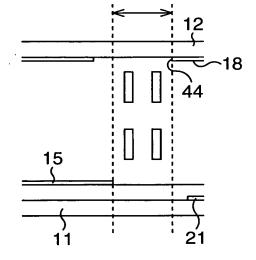


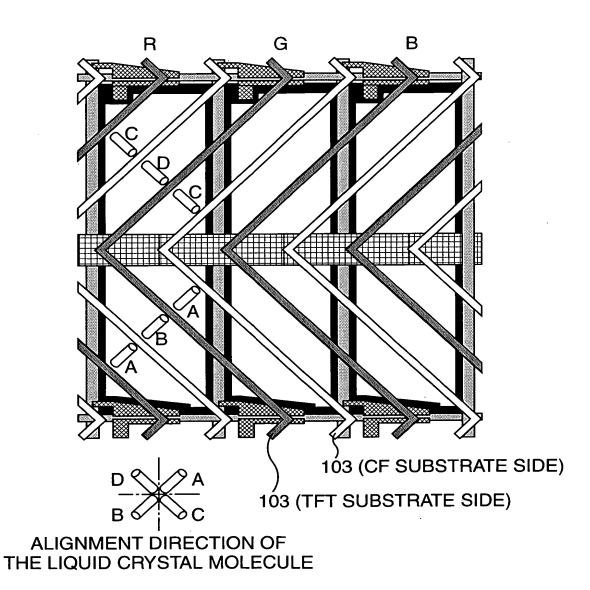
FIG. 21B

A REGION WITH NO ELECTRODE ON BOTH OF THE SUBSTRATES



LIQUID CRYSTAL DISPLAY DEVICE . . .
Takeda et al.
Greer, Burns & Crain, Ltd. (Patrick Burn
Ref. No. 1117.66107
Sheet 19 of 27 (312) 360 0080

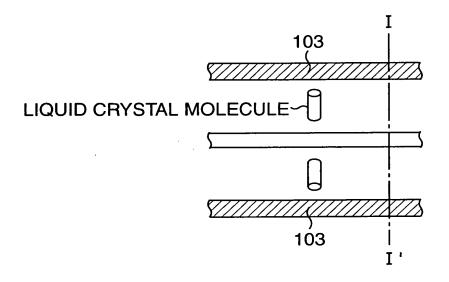
FIG. 22



PIXEL STRUCTURE OF AN MVA LIQUID CRYSTAL DISPLAY (ONE PIXEL)

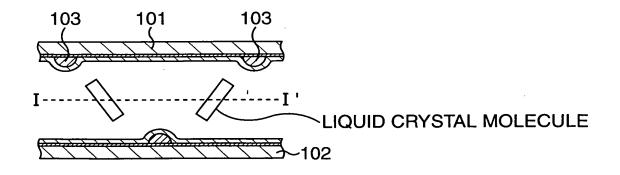
LIQUID CRYSTAL DISPLAY DEVICE . . .
Takeda et al.
Greer, Burns & Crain, Ltd. (Patrick Burn
Ref. No. 1117.66107
Sheet 20 of 27 (312) 360 0080

FIG. 23A

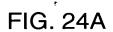


PLANE VIEW

FIG. 23B



indujuic oiiuus



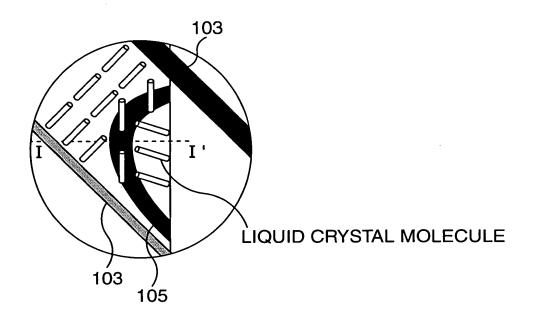
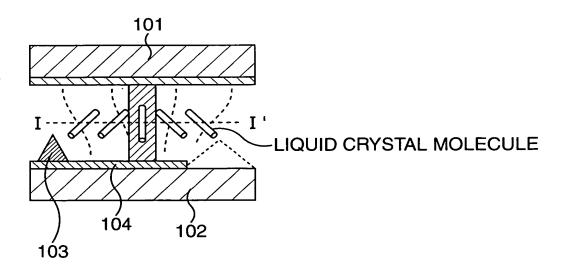
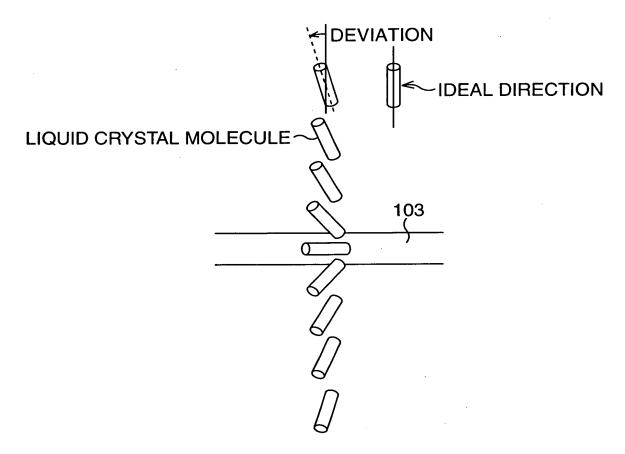


FIG. 24B



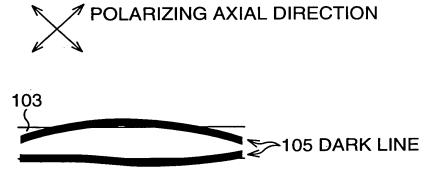
LIQUID CRYSTAL DISPLAY DEVICE . . .
Takeda et al .
Greer, Burns & Crain, Ltd. (Patrick Burn
Ref. No. 1117.66107
Sheet 22 of 27 (312) 360 0080

FIG. 25A



ALIGNMENT DIRECTION OF THE LIQUID CRYSTAL MOLECULE

FIG. 25B



OPTICAL APPEARANCE

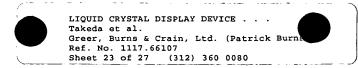


FIG. 26A

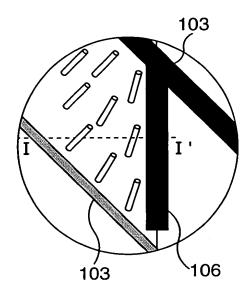
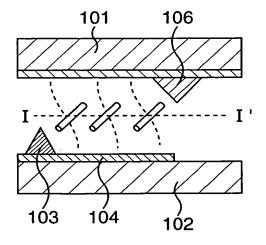


FIG. 26B



LIQUID CRYSTAL DISPLAY DEVICE . . .
Takeda et al.
Greer, Burns & Crain, Ltd. (Patrick Burns)
Ref. No. 1117.66107
Sheet 24 of 27 (312) 360 0080

FIG. 27A

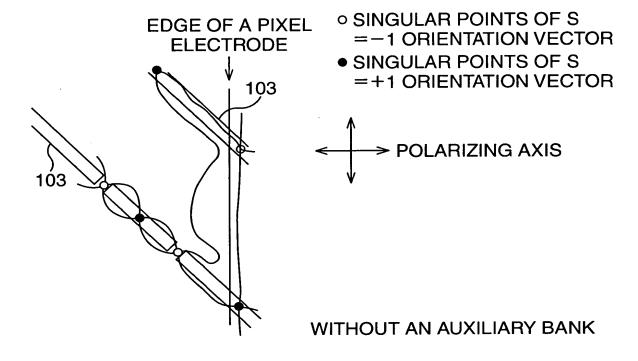
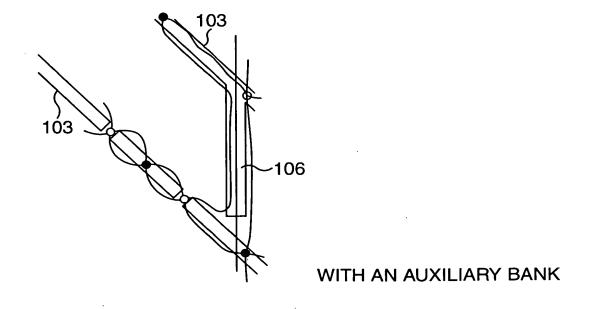


FIG. 27B



LIQUID CRYSTAL DISPLAY DEVICE . . .
Takeda et al.
Greer, Burns & Crain, Ltd. (Patrick Burns)
Ref. No. 1117.66107
Sheet 25 of 27 (312) 360 0080

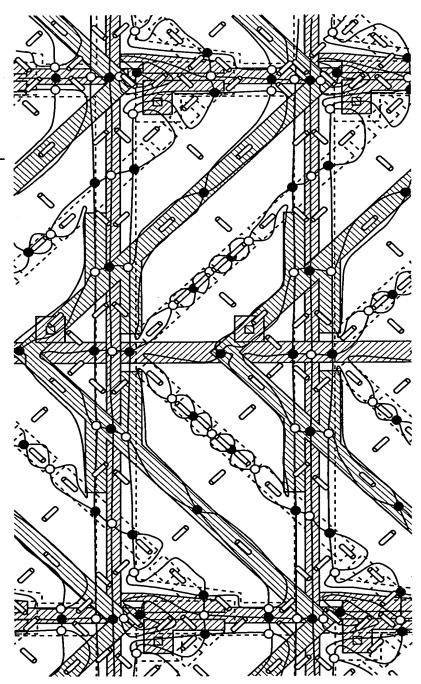
FIG. 28

STRENGTH OF SINGULAR POINTS OF ORIENTATION VECTOR

●S=+1

OS=-1

OBSERVED WITH A TFT SUBSTRATE ON A LOWER SIDE AND A CF SUBSTRATE ON AN UPPER SIDE



COUNTY OF CANADA

Greer, Burns & Crain, Ltd. (Patrick Burns

Ref. No. 1117.66107 Sheet 26 of 27 (312) 360 0080

FIG. 29A

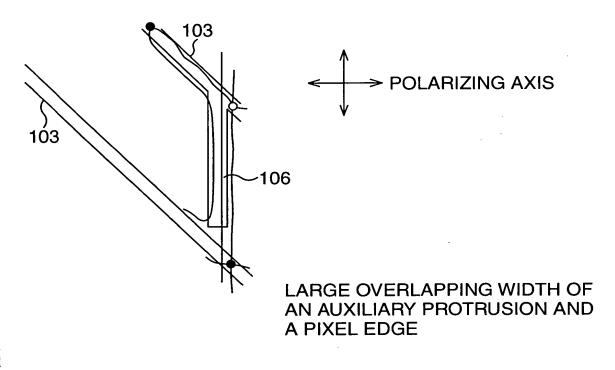
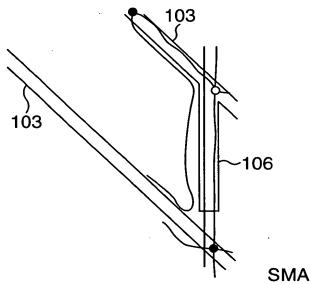


FIG. 29B



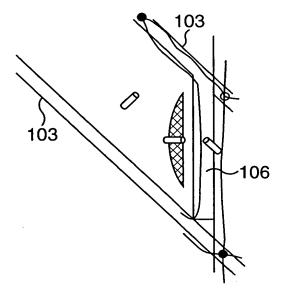
SMALL OVERLAPPING WIDTH OF AN AUXILIARY PROTRUSION AND A PIXEL EDGE

IQUID CRYSTAL DISPLAY DEVICE

rakeda et al. Greer, Burns & Crain, Ltd. (Patrick Burns) Ref. No. 1117.66107 Sheet 27 of 27 (312) 360 0080



FIG. 30





LARGE OVERLAPPING WIDTH OF AN AUXILIARY BANK AND A PIXEL (LARGER THAN THAT OF UPPER CASES SHOWN IN FIG.7)

etin f f to be the contact of